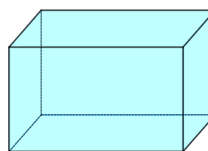
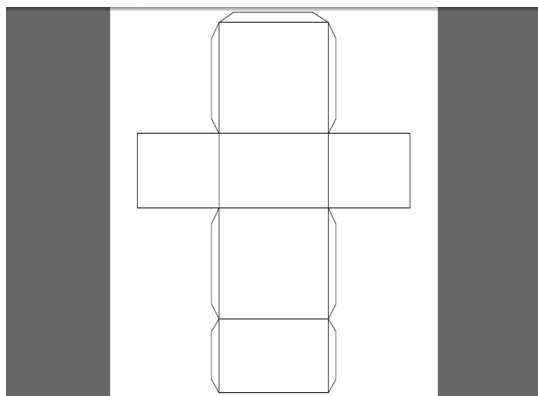


9-2 and 9-4 Surface Area and Volume of Prisms



Surface Area = sum of area of its faces

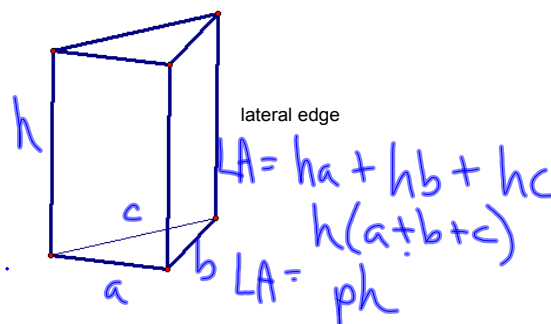
Net of a rectangular prism



Lateral faces of a prism--faces that are not the bases

—rectangles

Lateral Area--sum of the areas of the lateral faces



Lateral Area

$$LA = p \times h$$

p - perimeter of Base

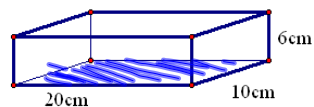
Surface Area

$$SA = LA + 2B$$

B → area of base

$$Volume = B \times h$$

Example:



$$p = 2(20) + 2(10) = 60 \text{ cm}$$

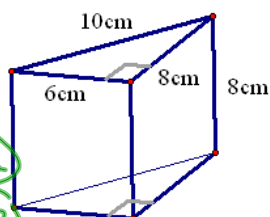
$$B = 20 \cdot 10 = 200 \text{ cm}^2$$

$$LA = ph = 60 \cdot 6 = 360 \text{ cm}^2$$

$$SA = LA + 2B = 360 + 2(200) = 760 \text{ cm}^2$$

$$V = Bh = 200 \cdot 6 = 1200 \text{ cm}^3$$

Example:



$$p = 6 + 8 + 10 = 24 \text{ cm}$$

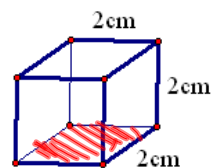
$$B = \frac{1}{2}bh = \frac{1}{2}6 \cdot 8 = 24 \text{ cm}^2$$

$$LA = ph = 24 \cdot 8 = 192 \text{ cm}^2$$

$$SA = LA + 2B = 192 + 2(24) = 240 \text{ cm}^2$$

$$V = Bh = 24 \cdot 8 = 192 \text{ cm}^3$$

Example:



$$p = 4 \cdot 2 = 8 \text{ cm}$$

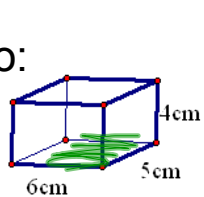
$$B = 2^2 = 4 \text{ cm}^2$$

$$LA = ph = 8 \cdot 2 = 16 \text{ cm}^2$$

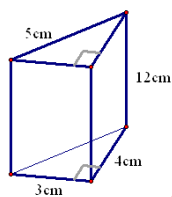
$$SA = LA + 2B = 16 + 2(4) = 24 \text{ cm}^2$$

$$V = Bh = 4 \cdot 2 = 8 \text{ cm}^3$$

Do:



$$\begin{aligned}
 p &= 22\text{cm} \\
 B &= 30\text{cm}^2 \\
 LA &= p \cdot h = 22 \cdot 4 = 88\text{cm}^2 \\
 SA &= 88 + 2(30) = 148\text{cm}^2 \\
 V &= 30 \cdot 4 = 120\text{cm}^3
 \end{aligned}$$



$$\begin{aligned}
 p &= 3+4+5 = 12\text{cm} \\
 B &= \frac{1}{2} \cdot 4 \cdot 3 = 6\text{cm}^2 \\
 LA &= 12 \cdot 12 = 144\text{cm}^2 \\
 SA &= 144 + 2(6) = 156\text{cm}^2 \\
 V &= 6 \cdot 12 = 72\text{cm}^3
 \end{aligned}$$

Assignment:

p487-488

1-4, 8-10, 14-16, 17-19 (Find p, B, LA, and SA)

p503

11-13

